OCCUPATIONAL INJURIES AND DISEASES IN ALBERTA

Forestry and Related Industries 1995 to 1999

Lost-Time Claims
And
Claim Rates

Alberta
HUMAN RESOURCES
AND EMPLOYMENT

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1. Introduction

The Mission of Alberta Human Resources and Employment

One of the missions of Alberta Human Resources and Employment is to work in partnership with Albertans to promote safe and healthy workplaces, a quality working life and comprehensive safety systems. To this end, the department recognizes that monitoring health and safety in Alberta will help to ensure that primary workplace health and safety concerns are actively managed and prioritized and resources directed where most needed.

This report summarizes the lost-time injuries and disease claims accepted by the WCB-Alberta, characteristics of the injured worker and the risk of injury to workers in Alberta's forest and related industry between the years 1995 and 1999. A summary of occupational fatalities accepted by the Workers' Compensation Board (WCB) and detailed description of those fatalities investigated by Occupational Health and Safety (OHS) are also provided. Cost of lost-time injuries and revenue in terms of premiums are also provided.

The purpose of this report is to provide government, employers, workers, and health and safety officers in Alberta's forestry industry information about the industry key health and safety issues

The Forest industry in this report includes: Primary Forest Activities and Forest Product Manufacturing.

2. Primary Forest Activities

For the sake of simplicity, primary forest activities will be called forestry in this report. This activity is made up of two industries: Logging and Woodlands Operations and Timber Management.

2.1 Industry Descriptions

Logging and Woodlands Operations, Including Trucking of Logs (Industry # 03100)

The business activity of logging in Alberta relates specifically to the physical harvesting of trees. Often referred to as "stump to dump" logging, the activities comprise all elements of harvesting including the transport of logs to a mill. Logging is performed both on crown land, through various forms of timber disposition, and on private land.

Logging contractors may perform all harvest activities from cutting to delivery; however, they will often contact out specialized functions of their harvest requirements. Such specialized contractors, when active in logging contacts, are covered under this industry. This is particularly common where trucking of logs is concerned.

Logging can be performed conventionally, using chain saws and line skidders or mechanically, using equipment such as; feller bunchers, grapple skidders, delimbers, harvesters, forwarders and loaders. Both conventional and mechanical logging methods form part of this industry.

In Alberta, it has become common for mill operators to hold logging rights (generally under Forest Management Agreements-FMA's) and contract out the harvesting. The mill operators coordinate the harvesting through "woodlands administration" division. Woodlands administration refers to forest technicians, foresters and their support staff. Woodlands administration is considered to be a normal function of a mill and when conducted by the mill operator's own workers, does not require a separate classification. Woodlands administration, when conducted by the independent third parties under contract to the mill, will be classified according to the service provided, generally industry 3902.

Timber Management (Industry # 03902)

This classification addresses those activities carried on as a separate business within the forest industries, outside of logging or log processing. Employers in this industry do no logging, trucking of logs, sawing or handling of logs, nor do they use any equipment or tools of any significant size.

Planting of seedlings is performed with a variety of hand tools designed to punch a hole in the ground into which a seedling is placed. Check plots are performed on recently planted areas as a visual inspection intended to determined the effectiveness of the planters' work.

Regeneration Surveys are the inspection of logged areas to determine natural stocking levels. The cut block is divided into a grid pattern of equal spacing. Each point in the grid is inspected for a one square metre area in an effort to locate natural regeneration (seedling). Unstocked blocks will require planting and seedling. The only tool used in regeneration surveys are small hand rakes for clearing tall grass and debris

Timber Cruising is a method of determining tree stand volumes, type and condition. Performed in pairs, timber cruisers follow predetermined compass bearing to arrive at numerous randomly selected plots. At the plots the timber cruisers use a variety of hand held measuring instruments to measure and record information needed to formulate harvest plans.

Block Layout is the marking of the cut block boundaries. Performed in pairs, this activity involves following predetermined compass bearing or natural stand boundaries while marking trees with seismic ribbon or spray paint.

Cone Picking is the natural gathering of cones to be used for seed. Often cone picking takes place in recently logged areas where cones are readily accessible in the remaining branches of the harvested trees.

Log Scaling is a method of determining volumes of harvested trees. Log scalers often work at the unloading deck of a mill but may scale logs at individual cut block landings. Using a calibrated measuring stick and a can of spray paint, the scaler considers diameter, length and wood rot to determine wood volumes.

Stand Tending is the process where competing vegetation is removed from immature stands to allow for optimum growing conditions. Small trees and vegetation are removed at predetermined spacing using brush cutters. This is a pre-commercial form of thinning. Power saws (chainsaws) are not to be included in this classification.

3. Lost-Time Claims (LTC) and Claim Rates:-Forestry

Forestry

Year	# of Accounts	Cost	Person Years	Days Lost	Duration Rate	LTCs	LTC Rate
1995	3,120	$1,886,703	5,936	15,155	570	261	4.4
1996	2,964	$1,832,357	5,254	14,997	539	248	4.7
1997	2,822	$2,077,085	5,379	12,866	431	241	4.5
1998	2,785	$1,458,379	5,564	11,956	443	227	4.1
1999	2,794	$996,034	5,560	13,074	481	256	4.6

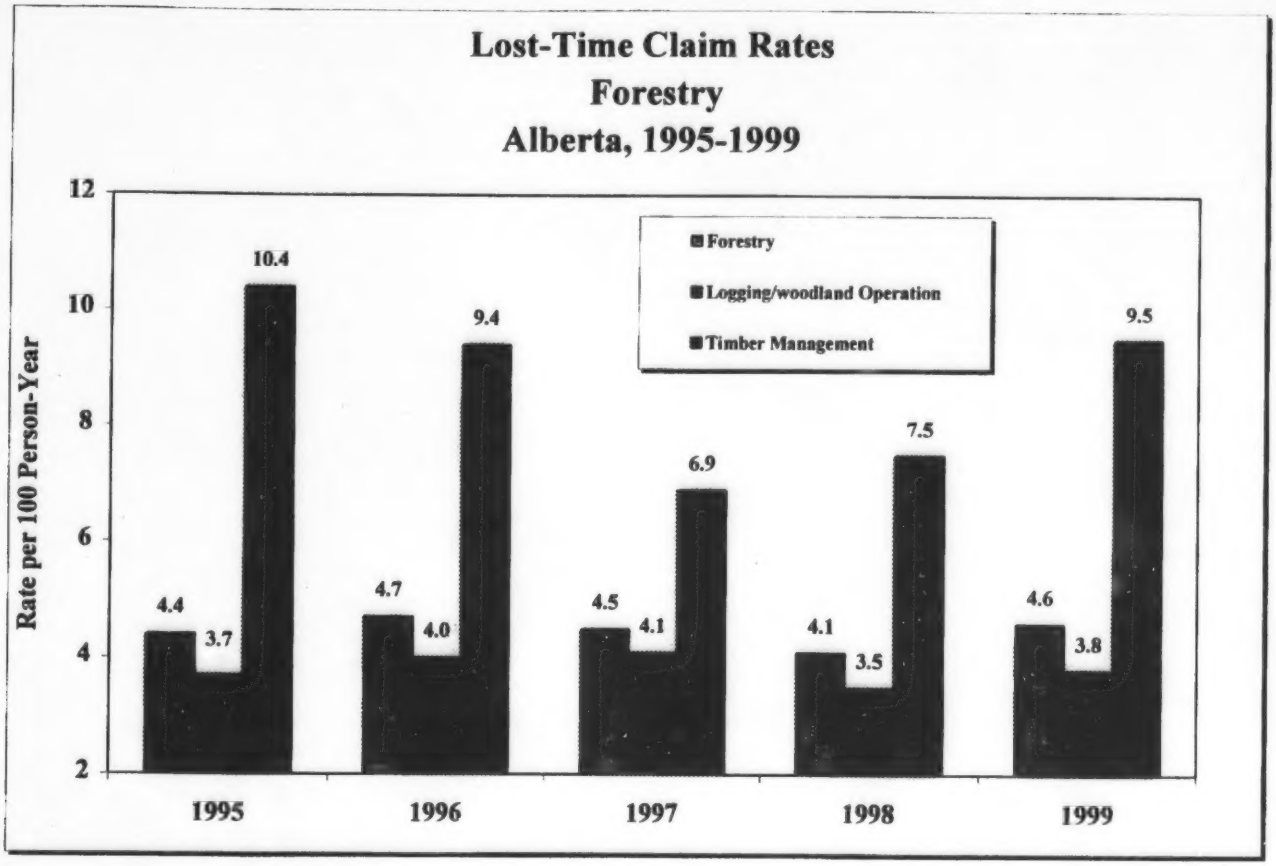
3.1 Lost-Time Claim Rates by Industry

3100-Logging and Woodland Operations

Year	# of Accounts	Cost	Person Years	Days Lost	Duration Rate	LTCs	LTC Rate
1995	3,004	$1,536,569	5,284	13,051	247	193	3.7
1996	2,839	$1,711,024	4,524	13,194	292	179	4.0
1997	2,691	$1,961,420	4,610	11,465	249	188	4.1
1998	2,651	$1,350,038	4,768	10,123	212	167	3.5
1999	2,634	$867,128	4,772	11,116	233	181	3.8

3902-Timber Management

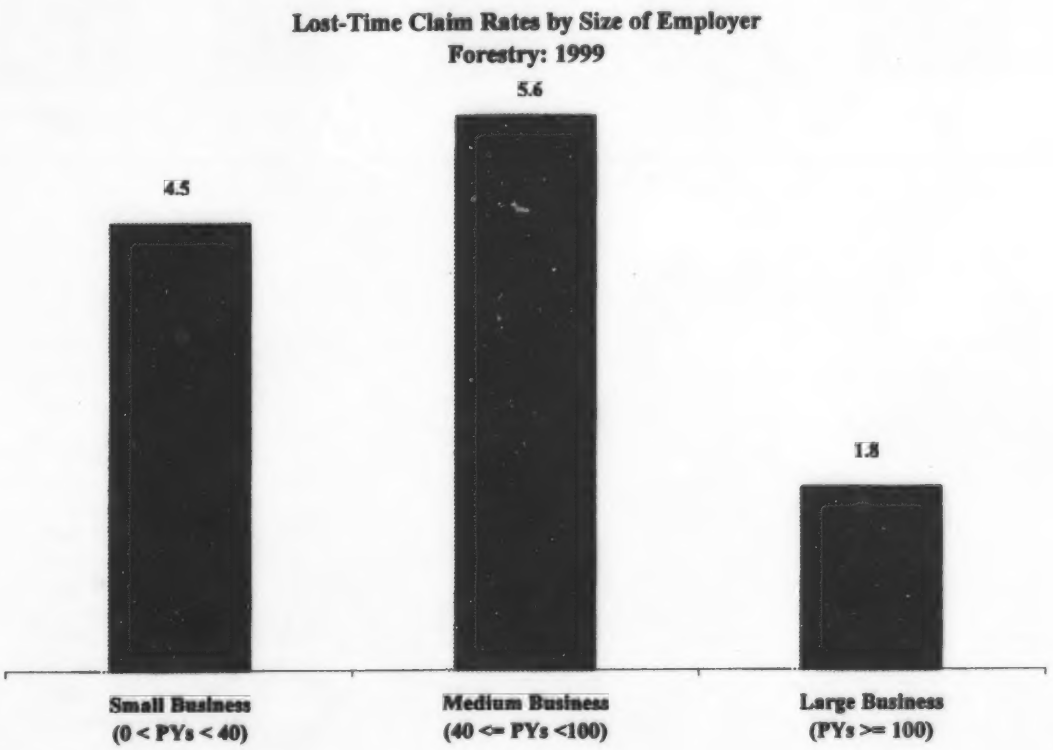
Year	# of Accounts	Cost	Person Years	Days Lost	Duration Rate	LTCs	LTC Rate
1995	116	$350,134	652	2,104	323	68	10.4
1996	125	$121,333	730	1,803	247	69	9.4
1997	131	$115,665	769	1,401	182	53	6.9
1998	134	$108,341	796	1,833	230	60	7.5
1999	160	$128,907	788	1,958	248	75	9.5


Lost-Time Claim Rates
Forestry
Alberta, 1995-1999
Rate per 100 Person-Year
12
10
8
6
4
2
Forestry
Logging/woodland Operation
Timber Management
4.4
3.7
10.4
4.7
4.0
9.4
4.5
4.1
6.9
4.1
3.5
7.5
4.6
3.8
9.5
1995
1996
1997
1998
1999

3.2 LTC Rates by Size of Employer: 1999

Forestry

Size of Employer	# of Accounts	LTCs	Person - Years	LTC Rate
A: 0< PY <=1	1,757	37	703	5.3
B: 1 < PYs < 5	582	64	1,294	4.9
C: 5 <= PYs < 10	101	26	689	3.8
D: 10 <= PYs < 20	51	31	714	4.3
E: 20 <= PYs < 40	33	38	927	4.1
F: 40 <= PYs < 100	16	51	908	5.6
G: PYs >=100	2	6	326	1.8
H: Invalid	251	3	0	N/A
Total	2,793	256	5,560	4.6



4. Analysis of the Lost-Time Claims: Forestry

4.1 Nature of Injury

LOST-TIME CLAIMS ALBERTA: 1995 TO 1998	OCCURRENCE YEAR					Total	
	1995	1996	1997	1998	1999	Number	Percent
SPRAIN, STRAIN, TEARS	80	76	80	82	94	412	33.4
FRACTURE, DISLOCATION	41	39	46	40	36	202	16.4
SURFACE WOUNDS, BRUISES	43	46	31	29	37	186	15.1
OPEN WOUNDS	36	22	30	25	19	132	10.7
OTHER TRAUMATIC INJURIES/DISEASE	18	30	24	18	32	122	9.9
SYSTEMIC DISEASES,DISORDERS	14	9	9	17	21	70	5.7
MULTIPLE DISEASE, DISORDERS	.	7	3	2	2	14	1.1
BURNS	1	3	4	1	1	10	0.8
SYMPTOMS, SIGN/ILL-DEFINED CONDITIONS	1	1	2	.	.	4	0.3
OTHER DISEASE,CONDITIONS,DISORDERS	.	.	.	1	.	1	0.1
INFECTIOUS,PARASITIC DISEASE	.	1	.	.	.	1	0.1
NATURE-UNKNOWN	27	14	12	12	14	79	6.4
Total	261	248	241	227	256	1,233	100.0

4.2 Duration of Disability

LOST-TIME CLAIMS ALBERTA: 1995 TO 1998	OCCURRENCE YEAR					Total	
	1995	1996	1997	1998	1999	Number	Percent
A: 01 Day	14	14	18	11	10	67	5.4
B: 02 Days	11	7	9	8	12	47	3.8
C: 03 - 05 Days	21	31	25	22	26	125	10.1
D: 06 - 10 Days	35	35	29	27	35	161	13.1
E: 11 - 20 Days	33	18	29	31	32	143	11.6
F: 21 - 30 Days	26	20	19	24	23	112	9.1
G: 31 Days OR More	116	118	107	98	112	551	44.7
H: Unspecified	5	5	5	6	6	27	2.2
Total	261	248	241	227	256	1,233	100.0

4.3 Part of Body Injured

LOST-TIME CLAIMS ALBERTA: 1995 TO 1998	OCCURRENCE YEAR					Total	
	1995	1996	1997	1998	1999	Number	Percent
BACK	47	36	52	39	55	229	18.6
ANKLE(S) & FOOT(FEET)-NOT TOES	36	50	40	27	31	184	14.9
OTHER TRUNK	25	32	35	38	38	168	13.6
LEG(S)	32	32	28	29	29	150	12.2
WRIST(S)/HAND(S)	23	18	12	23	26	102	8.3
FINGER(S)	18	17	16	19	9	79	6.4
MULTIPLE BODY PARTS	15	20	9	12	18	74	6.0
OTHER HEAD	23	11	18	7	9	68	5.5
OTHER UPPER EXTREMITIES	11	6	12	12	15	56	4.5
NECK	14	6	9	9	12	50	4.1
EYE(S)	10	12	2	9	12	45	3.6
OTHER LOWER EXTREMITIES	5	6	5	2	2	20	1.6
BODY SYSTEMS	1	2	3	.	.	6	0.5
UNKNOWN	1	.	.	.	.	1	0.1
OTHER BODY PARTS	.	.	.	1	.	1	0.1
Total	261	248	241	227	258	1,233	100.0

4.4 Type of Event/Exposure

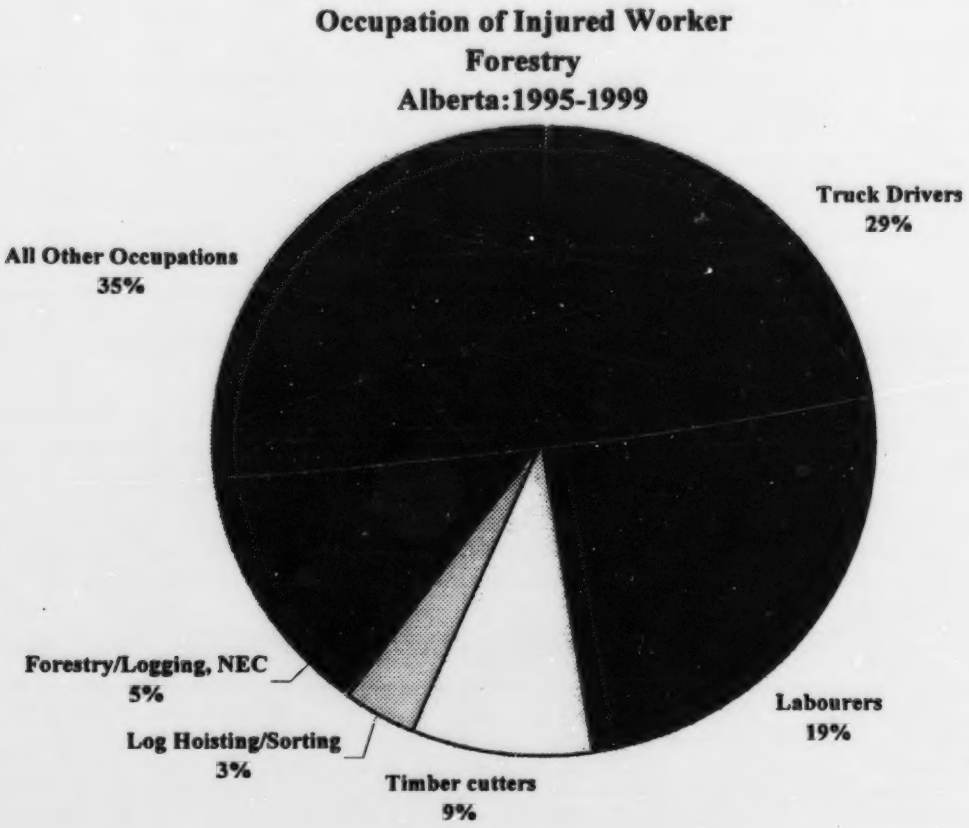
LOST-TIME CLAIMS ALBERTA: 1995 TO 1998	OCCURRENCE YEAR					Total	
	1995	1996	1997	1998	1999	Number	Percent
STRUCK BY OBJECTS	72	61	54	36	34	257	20.8
TRANSPORTATION ACCIDENTS	35	29	33	25	39	161	13.1
BODILY REACTION	26	21	22	23	28	120	9.7
FALL ON SAME LEVEL	18	21	18	21	34	112	9.1
OVEREXERTION	23	22	23	23	25	116	9.4
FALL TO LOWER LEVEL	19	19	17	19	13	87	7.1
CAUGHT IN OBJECTS	16	12	11	12	8	59	4.8
STRUCK AGAINST OBJECTS	9	11	11	9	12	52	4.2
OTHER FALLS	.	3	8	10	8	29	2.4
RUBBED OR ABRADED	10	8	.	3	6	27	2.2
REPETITIVE MOTIONS	.	4	3	6	12	25	2.0
EXPOSURE TO HARMFUL SUBSATANCE	2	5	8	7	3	25	2.0
FIRES AND EXPLOSIONS	.	2	.	.	.	2	0.2
OTHER ASSAULTS/VIOLENT ACTS	1	1	.	1	.	3	0.2
OTHER BODILY REACTION/EXERTION	.	.	.	1	2	3	0.2
OTHER CONTACT WITH OBJECT/EQUIP	.	.	.	1	2	3	0.2
ASSAULTS/VIOLENT ACTS BY PERSONS	.	.	.	1	.	1	0.1
UNKNOWN	30	29	33	29	30	151	12.2
Total	261	248	241	227	256	1,233	100.0

4.5 Source of Injury

LOST-TIME CLAIMS ALBERTA: 1995 TO 1998	OCCURRENCE YEAR					Total	
	1995	1996	1997	1998	1999	Number	Percent
UNKNOWN	45	46	52	38	53	234	19.0
OTHER PLANTS/ANIMALS/MINERALS	61	60	45	35	35	236	19.1
VEHICLES	51	29	35	26	38	179	14.5
STRUCTURES/SURFACES	24	28	26	35	38	151	12.2
PERSONS-INJURED WORKER	26	24	25	31	42	148	12.0
PARTS AND MATERIALS	11	16	21	22	12	82	6.7
MACHINERY	6	10	7	11	12	46	3.7
HANDTOOLS-POWERED	13	8	12	4	6	43	3.5
OTHER SOURCES	10	9	5	6	7	37	3.0
HANDTOOLS-UNPOWERED	8	6	6	7	3	30	2.4
OTHER TOOLS/EQUIPMENTS	.	2	1	4	1	8	0.6
CHEMICAL/CHEMICAL PRODUCTS	2	1	2	1	1	7	0.6
PERSONS-OTHER THAN INJURED WORKER	1	.	.	1	.	2	0.2
CONTAINERS	3	8	2	5	8	26	2.1
MINERALS-METALSL/NONMETALLIC	.	1	1	1	.	3	0.2
FURNITURE AND FIXTURES	.	.	1	.	.	1	0.1
Total	261	248	241	227	256	1,233	100.0

5. Characteristics of the Injured Worker

5.1 Occupation[1] of Injured worker



[1] None of the individual occupations belonging to the 'all other occupation' category accounted for more than 3% of the total lost-time claims.

5.2 Length of Time Employed

LOST-TIME CLAIMS ALBERTA: 1995 TO 1998	OCCURRENCE YEAR					Total	
	1995	1996	1997	1998	1999	Number	Percent
A: LESS THAN 1 MONTH	71	65	54	40	39	269	21.8
B: 1 MONTH TO < 6 MONTHS	100	75	71	68	94	408	33.1
C: 6 MONTHS TO < 1 YEAR	19	10	12	10	17	68	5.5
D: 1 YEAR OR MORE	27	22	30	57	41	177	14.4
E: TIME UNSPECIFIED	44	76	74	52	65	311	25.2
Total	261	248	241	227	256	1,233	100.0

5.3 Age of injured Worker

LOST-TIME CLAIMS ALBERTA: 1995 TO 1998	OCCURRENCE YEAR					Total	
	1995	1996	1997	1998	1999	Number	Percent
A: 15 - 19 Years	20	17	10	14	10	71	5.8
B: 20 - 24 Years	56	57	45	44	59	261	21.2
C: 25 - 34 Years	84	79	65	58	67	353	28.6
D: 35 - 44 Years	52	54	71	62	63	302	24.5
E: 45 - 54 Years	29	29	35	28	41	162	13.1
F: 55+ Years	18	11	14	20	14	77	6.2
G: Unspecified	2	1	1	1	2	7	0.6
Total	261	248	241	227	256	1,233	100.0

5.4 Gender of Injured Worker

LOST-TIME CLAIMS ALBERTA: 1995 TO 1998	OCCURRENCE YEAR					Total	
	1995	1996	1997	1998	1999	Number	Percent
MALES	237	222	221	201	223	1,104	89.5
FEMALES	22	17	17	20	27	103	8.4
UNSPECIFIED	2	9	3	6	6	26	2.1
Total	261	248	241	227	256	1,233	100.0

6. Cost of Claims and Employer Premiums

Forestry

	OCCURRENCE YEAR				
	1995	1996	1997	1998	1999
TRANSACTION YEAR					
1995	$1,612,170				
1996	$803,011	$1,585,332			
1997	$695,528	$723,995	$1,677,429		
1998	$435,300	$557,741	$1,077,440	$1,165,858	
1999	$310,468	$333,236	$1,051,096	$831,214	$1,136,581
Total Cost	$3,856,478	$3,200,304	$3,805,965	$1,997,072	$1,136,581
Total Premiums	$12,797,785	$7,615,916	$7,108,064	$6,414,663	$5,284,053

The above cost for claims and premiums are for the five-year period 1995 through 1999.
The data is as at July 6, 2000.

The claim costs reflect amount paid on claims that have occurred in the five-year period.
The claim costs are tracked by the year of occurrence and year that the costs were transacted.

The premiums are the total premiums paid by employers for the year.

7. Occupational Fatalities in Forestry

An occupational fatality is the death of a worker that results from a work-related incident or exposure. Alberta Labour classifies occupational fatalities into three general categories: motor vehicle collision, workplace incident and occupational disease. Each of these is described below.

Motor Vehicles Incidents
Motor vehicles incidents typically involve non-industrial vehicles operating on public roads in which the fatally injured worker was either a driver or a passenger. This category also includes fatalities involving aircraft crashes, train crashes, helicopter crashes etc.

Workplace Incidents
Fatal workplace incidents consist of cases in which the worker dies at a work site, or as a result of injuries sustained at a work site. This is the type of fatality that Alberta Human Resources and Employment typically investigates.

Occupational Disease
Occupational disease fatalities consist mostly recognize occupational disease, that is, disease known to be primarily or exclusive work-related.
Occupational diseases are usually diagnosed many years after the initial or crucial exposure to the toxic substance, and in such cases it is very difficult to determine when the exposure occurred. This category should, therefore, not be interpreted to reflect present work site hazards. This category also includes heart attacks suffered on the job.

Each year the Workers' Compensation Board (WCB) accepts occupational fatality claims for compensation. Most of the occupational disease fatalities accepted in a particular year are the result of incidents or exposure from prior years. Fatalities accepted in a year do not mean all of them happened in that year.

Description of Forestry Fatalities Accepted by WCB
Alberta: 1995-1999

Year	Occupational Disease		Motor Vehicle incident		Workplace Incident		Total	
	N	%	N	%	N	%	N	%
1995	1	33.3	0	0.0	2	66.7	3	100
1996	1	33.3	0	0.0	2	66.7	3	100
1997	0	0.0	1	25.0	3	75.0	4	100
1998	0	0.0	1	100.0	0	0.0	1	100
1999	0	0.0	0	0.0	1	100.0	1	100
Total	2	16.7	2	16.7	8	66.7	12	100

8. OHS Investigated Occupational Fatalities, 1995-1999

Primary Forest Activity (Forestry) (8)

YEAR:	1995	FILE:	0801
OCCUPATION:	Truck Driver	AGE:	30
INDUSTRY:			
EXPERIENCE:	12 Years		

DESCRIPTION: A worker was fatally injured when he was crushed in the cab of a logging truck. The loaded logging truck was coming down a 5% grade and the driver was attempting to negotiate a sharp right curve. The truck went off the road on the left and rolled over landing in the creek bed on the north side of the road. The road surface was icy due to weather conditions.

YEAR:	1995	FILE:	0812
OCCUPATION:	Log Loader	AGE:	45
INDUSTRY:	Logging, Woodlands Operations		
EXPERIENCE:	20 Years		

DESCRIPTION: The worker was unloading a log loader from a sixteen-wheel tractor trailer unit. He was walking the loader off the trailer when the unit shifted ahead as it descended the beaver-tailed trailer. The sudden shift of the loader caused the front tracks of the unit to contact the ground and the unfastened cab of the loader struck the ground. The worker sustained injuries that later resulted in his death

YEAR:	1995	FILE:	0823
OCCUPATION:	Chainsaw Operator	AGE:	28
INDUSTRY:	Forestry		
EXPERIENCE:	10 years		

DESCRIPTION: The company was harvesting trees on private land. The operation consisted of one faller, falling trees with chainsaw, two workers operating mechanical wheeled skidder and two workers limbing, topping and cutting trees into lengths. The worker was employed as a chainsaw operator falling trees in a logging operation. The worker notched and put the falling cut in a large poplar tree. The tree, instead of falling, leaned back against the falling cut and remained standing. The worker then moved about 30 metres from the partially cut tree and started the notch in another tree. While he was bent over cutting the notch, the partially cut tree fell, striking the worker causing fatal injuries.

YEAR:	1996	FILE:	0829
OCCUPATION:	Faller	AGE:	51
INDUSTRY:	Logging, Woodlands Operations		
EXPERIENCE:	20 years		

DESCRIPTION: The faller was cutting trees in an area of mature growth. There were several large black poplar trees, which appeared partially rotten and stumps in the area showed varying quality of cut. The faller cut one tree and it was moved to the south with the skidder. The employer moved the skidder to the south. The faller cut the second tree and the faller moved away to the south to clear the area. The falling spruce tree hit a poplar tree, knocking off the top portion, which fell and struck the faller, fatally injuring him.

YEAR: 1997 FILE: 0851
OCCUPATION: Equipment Operator AGE: 36
INDUSTRY: Logging, Woodlands Operations
EXPERIENCE: Two years

DESCRIPTION: The slasher is a large machine used to cut trees into log lengths. The slasher consists of an operators cab, a log grapple, a log deck and a large saw used to cut the trees. Two workers were preparing to remove a portion of a broken saw guard. The injured worker had positioned himself up on the frame of the saw, when the other worker activated the saw to move it up onto the slasher deck. When the saw was activated, the worker was crushed between the moving saw frame and the fixed saw guard.

YEAR: 1997 FILE: 0853
OCCUPATION: Faller AGE: 28
INDUSTRY: Logging, Woodlands Operations
EXPERIENCE: Two years

DESCRIPTION: The faller's chainsaw became stuck in a tree and he called a skidder over to push the tree so he could dislodge the saw. The skidder operator backed his machine into the tree, and in doing so, his left front tire contacted a 7-metre high dry snag, knocking it over and onto the faller who was standing 5 metres behind and to the left of the skidder. The faller received fatal head and crushing injuries.

YEAR: 1997 FILE: 0869
OCCUPATION: Tree Faller AGE: 60
INDUSTRY: Logging, Woodlands Operations
EXPERIENCE: 33 years

DESCRIPTION: The worker was a member of a crew of workers harvesting trees in a logging operation. He was operating a chain saw falling trees. He cut a large pine tree which was supporting a leaning dry snag. When the tree that he cut fell, the dry sang came down striking the worker on his head causing fatal injuries.

YEAR: 1998 FILE: 0889
OCCUPATION: Truck Driver AGE: 29
INDUSTRY: Logging, Woodlands Operations, including Trucking of Logs
EXPERIENCE: 5 years

DESCRIPTION: The logging truck was loaded with three rows of short logs measuring from 3.6 to 4.8 metres in length. The truck was travelling down a grade and the driver failed to negotiate a curve near the bottom of the grade. The truck left the road and rolled over, coming to rest upside down in a creek bed beside a bridge. The driver was pinned in the cab of the truck and died from his injuries.

9. Forest Product Manufacturing

This section provide a comprehensive picture of workplace health and safety in Alberta's Forest Products Manufacturing industry. Information on cost of injuries and total premiums are also presented.

Description of Forest Product Manufacturing Industries:

Employers in this activity may be classified into the following industries:
Sawmills and Planing Mills, Manufactures of Wood Products, Peeling and Pointing of Post, Wood Preserving, Pulp Mills, and Plywood, Chipboard, Strand board and Fibreboard Mills.

9.1 Industry Description

Sawmills & Planing Mills (Industry # 25100)

This classification involves sawing logs into rough lumber of various imperial and metric dimensions.

Sawmills vary from one man portable mills to large automated mills employing in excess of 100 personnel. Labour is performed largely by those trained on the job and would include equipment operators, sawyers, scalers and labourers. Large mills will employ mechanics, millwrights, welders, etc.

Logs are trucked to the mill, often weighed, off loaded and then scaled. The size of the mill dictates the complexity of the sawing process. Logs may be trimmed to length, debarked in a variety of debarking machines, and then sawn lengthwise into a cant (squared timber). The cant is further reduced into rough lumber by an edger. These processes may be manual in the case of portable mills, or highly automated using conveyers, pickers, and computer/laser guided saws in large mills.

Planing mills often accompany the large sawmill and function as a final cutting process for the lumber.

Various forms of specialized remanufacturing also forms part of this industry. This may involve cutting of grooves, bevels, edges, and may include cutting special edges on the boards such as tongue and grooves or ship lap. Remanufacturing lumber to metric sizes for overseas markets is also prevalent in this industry.

The restoration of railway ties and the manufacture of wooden shakes are activities also included in this industry.

Manufacturing of Wood Products (Industry # 25401)

Manufacturing includes cutting wood to specification, assembling and finishing the product.-big and small. Activities include, but is not limited to, planing, sawing, cutting, tonguing, grooving, nailing, screwing, gluing, clamping, filling, sanding and staining or painting of product big or small.

When installing their own product, it forms part of the employer's primary manufacturing activity. This industry may include a store front operations to sell related products and include relevant personnel and delivery. A showroom or display area may exist to present sample products.

Business may utilize saws, lathes, planers glue machines, handtools, forklifts, trucks and dust-collection equipment. A typical job mix may include carpenter-types, handymen, laborers, sales/estimators etc.

Peeling & Pointing of Post (Industry # 25900)

This industry covers businesses that perform the peeling and pointing of post exclusive of other lumber milling operations.

Post of uniform length are fed into a machine that rotates them much the same as a lathe at the same time peeling the bark off. One end is then ground to a point using a post pointer. The post are usually dip-treated following the peeling and pointing.

The posts peeled and pointed in this industry are generally smaller and used by farmers, ranchers or acreage owners, although the peeling and treating of telephone poles are also included in this industry.

Treating of Timber (Industry # 25901)

This classification involves the coating of wood with a preservative, including items such as fence posts, hydro poles, bridge timbers and railroad ties.

Some employers in this industry are involved only in dip-treating posts and poles. The product is immersed in a preservative solution in an open tank. Square cedar post for fences are usually treated on one end only.

Another, more elaborate process uses large cylinders (often seven feet in diameter and 150 feet long). The ties, timber, post or poles to be treated are strapped to small rail carts then loaded into cylinders. The timber is then subject to pressure and heat while being treated with the appropriate preservative. Following the prescribed time (which varies by product), the preservative solution is pumped out and the timber is then vacuum dried. The timber then leaves the cylinder and moved to a temporary storage area to drip dry. Pressure treaters usually have the capacity to peel, cut and incise their product using variety of machinery and hand tools. Some pressure treaters will slightly modify the product by predrilling holes for hardware, cutting special ends and cutting out defective areas.

The two most common preservatives are Chromated Copper Arsenate (CCA) and Pentachlorophenol (Penta).

Pulp Mills(Industry # 27102)

This industry covers the actual conversion of wood to wood pulp, generally to be used in paper manufacturing operations. This industry will include the manufacturing of newsprint, either done in conjunction with wood pulp manufacturing or as s separate business.

There are two types of pulp manufacturing:
-- bleached kraft pulp mills, and
-- chemithermomechanical pulp mills(CTMP)

Bleached kraft pulp mills rely on chemical processes to break down wood into pulp. CTMP mills rely on the mechanical grinding process to break down wood into pulp.

The pulp is compressed into 3 cubic ft. cubes/bundles and shipped to paper mills which convert the pulp to paper.

All activities from receiving the logs to processing into pulp, processing into paper, shipping the finished product and marketing is included in this industry.

Plywood, Chipboard, Strandboard & Fibreboard Mills (Industry # 27103)

This industry generally incorporates lumber processing other than sawmills and pulpmills. Included is plywood, chipboard, strandboard and fiberboard mills.

Chipboard, Strandboard and Fibreboard:
Spruce and aspen logs are cut to 2' and 3' length, then moved by conveyor to a machine that slices them into small chips or wafers. The chips are conveyed to a rotating dryer where moisture is removed, then to a chamber, where a mixture of glues and waxes is sprayed onto the chips.
The chips are dropped into trays 16' long by 4' wide which move to a heated press. Once in place, the trays (and chips) are pressed and heated to bond the chips into a board. 8' by 4' sheet are then cut and passed to a dryer where they are rotated until cool, then stacked and prepared for shipment.

With fibreboards, it is the fibres being pressed into board rather than chips or wafers. Otherwise the processes are similar.

Plywood:
Trees (mostly white spruce) are debarked and cut into peelers (8' 6" long), sorted and conditioned or steamed for 10 to 35 hours. The logs are then placed on a lathe and strips of veneer are peeled off from 1/10 to 1/8 inch thick. A clipper cuts out any defects, the veneer is trimmed and sent to the plywood mill. At the mills the sheets are sorted into grades, then lined up in presses. The interior cross banding (narrow strips) are glued on both sides and placed by hand between the layers. The sheets are glued and built up to required thickness. The ends are trimmed and the units are placed in a loading basket and put in the hot press automatically.

Employers who paint or stain board products are also included in this industry. Staining is a simple process of passing a board through a mechanical stainer (often called an Olympic Stainer) . The stainer will apply stain (or paint) to both sides and the edges of the board. Boards are then stacked to dry. This entire process can be handled by one person.

This industry encompasses all related activities including the wholesaling and warehousing of board products.

10. Lost-Time Claims and Claim Rates

All Forest Product Manufacturing

Year	# of Accounts	Cost	Person Years	Days Lost	Duration Rate	LTCs	LTC Rate
1995	950	$2,541,702	17,988	21,603	120	891	5.0
1996	929	$2,609,430	20,534	19,228	94	1,013	4.9
1997	954	$3,809,259	22,030	27,477	125	1,293	5.9
1998	961	$4,287,490	23,653	29,573	125	1,357	5.7
1999	998	$2,928,190	23,072	29,597	128	1,348	5.8

10.1 Lost-Time Claims and Claim Rates by Industry

Industry 25100-Sawmills & Planning Mills

Year	# of Accounts	Cost	Person Years	Days Lost	Duration Rate	LTCs	LTC Rate
1995	295	$981,574	5,189	7,683	148	319	6.1
1996	311	$911,452	5,940	7,149	120	302	5.1
1997	308	$1,358,591	6,474	9,424	146	359	5.5
1998	290	$1,311,238	6,056	8,178	135	361	6.0
1999	301	$1,158,139	6,572	9,875	150	373	5.7

Industry 25401-Manufacturing of Wood Products

Year	# of Accounts	Cost	Person Years	Days Lost	Duration Rate	LTCs	LTC Rate
1995	592	$1,372,848	6,767	12,657	187	500	7.4
1996	563	$1,198,482	8,229	10,540	128	624	7.6
1997	589	$1,896,641	10,479	15,792	151	823	7.9
1998	613	$2,366,555	11,163	19,181	172	882	7.9
1999	642	$1,544,590	11,413	17,996	158	870	7.6

Industry 25900-Peeling and Pointing of Post

Year	# of Accounts	Cost	Person Years	Days Lost	Duration Rate	LTCs	LTC Rate
1995	21	$14,213	72	157	N/A	4	5.6
1996	18	$18,116	63	228	N/A	8	12.6
1997	19	$47,360	63	443	N/A	9	14.3
1998	19	$52,383	56	308	N/A	6	10.8
1999	13	$8,957	35	177	N/A	6	N/A

Industry 25901- Treating of Timber

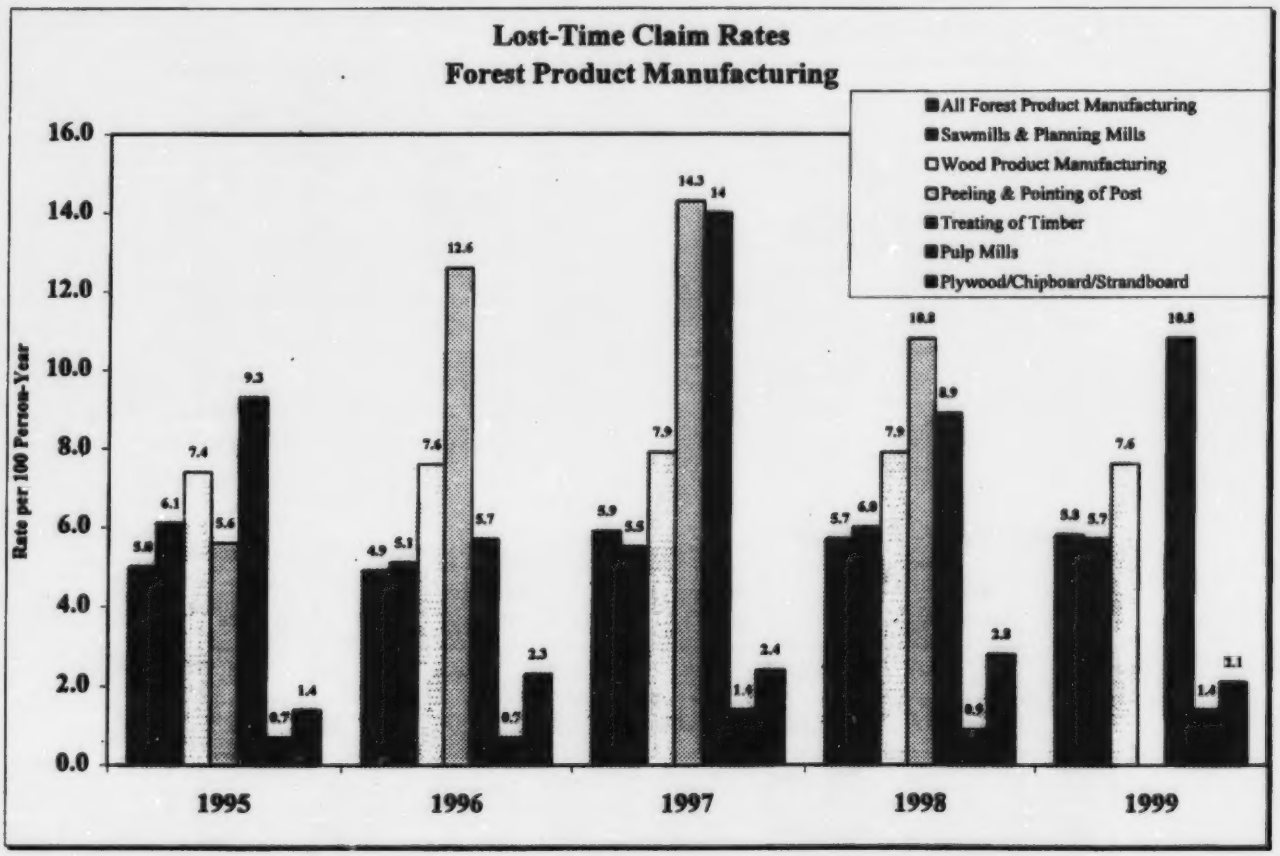
Year	# of Accounts	Cost	Person Years	Days Lost	Duration Rate	LTCs	LTC Rate
1995	6	$28,400	140	232	N/A	13	9.3
1996	5	$16,646	88	136	N/A	5	5.7
1997	4	$44,151	93	248	N/A	13	14.0
1998	4	$5,876	89	66	N/A	8	8.9
1999	5	$16,508	112	235	N/A	12	10.8

Industry 27102 – Pulp Mills

Year	# of Accounts	Cost	Person Years	Days Lost	Duration Rate	LTCs	LTC Rate
1995	13	$63,240	3,911	238	N/A	28	0.7
1996	13	$51,642	4,201	283	N/A	28	0.7
1997	15	$95,549	2,799	444	16	38	1.4
1998	15	$201,089	4,103	663	16	38	0.9
1999	15	$73,843	2,492	472	19	35	1.4

Industry 27103-Plywood/Chipboard/Strandboard

Year	# of Accounts	Cost	Person Years	Days Lost	Duration Rate	LTCs	LTC Rate
1995	23	$81,427	1,910	636	N/A	27	1.4
1996	19	$413,092	2,013	892	44	46	2.3
1997	19	$366,968	2,122	1,126	53	51	2.4
1998	20	$350,350	2,186	1,177	54	62	2.8
1999	22	$126,152	2,450	842	34	52	2.1

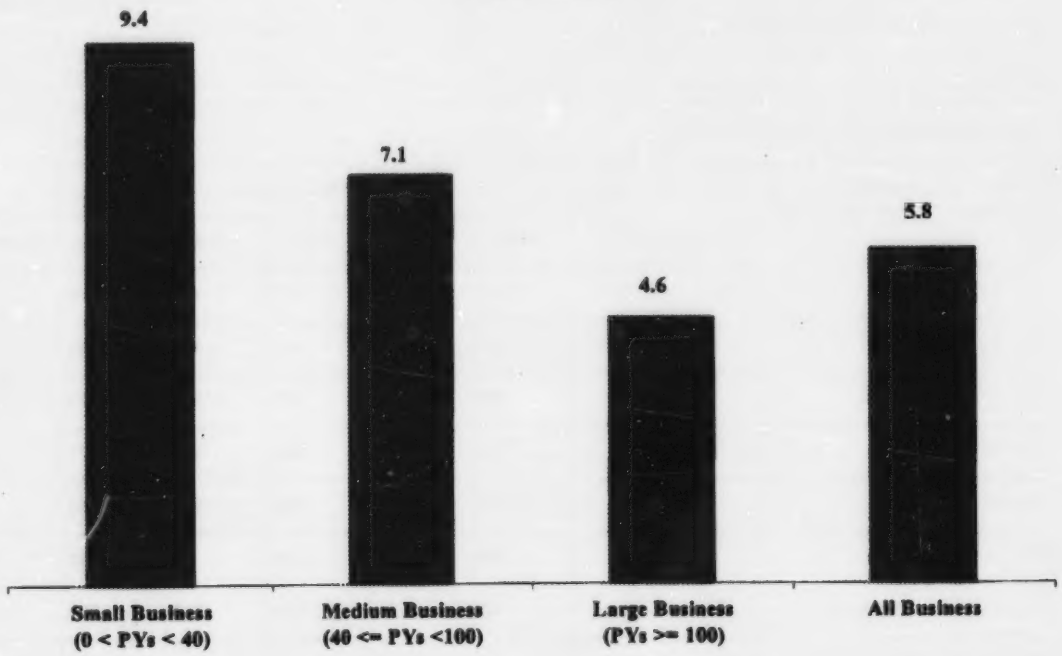


10.2 LTC Rates by Size of Employer: 1999

Forest Product Manufacturing

Size of Employer	# of Accounts	LTCs	Person - Years	LTC Rate
A: 0< PY <=1	351	18	159	11.3
B: 1 < PYs < 5	248	44	595	7.4
C: 5 <= PYs < 10	101	64	737	8.7
D: 10 <= PYs < 20	82	111	1,121	9.9
E: 20 <= PYs < 40	56	155	1,547	10.0
F: 40 <= PYs < 100	48	214	3,016	7.1
G: PYs >=100	54	737	15,897	4.6
H: Invalid	58	5	0	N/A
Total	998	1,348	23,072	5.8

LTC Rate by Size of Employer
Forest Product Manufacturing
Alberta: 1999



11. Analysis of the Lost-Time Claims:-Forest Product Manufacturing

11.1 Nature of Injury

LOST-TIME CLAIMS ALBERTA: 1995 TO 1998	OCCURRENCE YEAR					Total	
	1995	1996	1997	1998	1999	Number	Percent
SPRAIN, STRAIN, TEARS	313	353	483	499	493	2,141	36.3
OPEN WOUNDS	176	210	269	274	237	1,166	19.8
SURFACE WOUNDS, BRUISES	150	168	173	204	208	903	15.3
FRACTURE, DISLOCATION	94	85	149	144	113	585	9.9
OTHER TRAUMATIC INJURIES/DISEASE	29	88	100	102	175	494	8.4
SYSTEMIC DISEASES,DISORDERS	65	43	72	80	68	328	5.6
NATURE-UNKNOWN	55	47	31	39	31	203	3.4
BURNS	9	9	11	11	15	55	0.9
MULTIPLE DISEASE, DISORDERS	.	6	4	2	3	15	0.3
SYMPTOMS, SIGN/ILL-DEFINED CONDITIONS	.	2	1	2	3	8	0.1
OTHER DISEASE,CONDITIONS,DISORDERS	.	2	.	.	1	3	0.1
INFECTIOUS,PARASITIC DISEASE	.	.	.	.	1	1	0.0
Total	891	1,013	1,293	1,357	1,348	5,902	100.0

11.2 Duration of Disability

LOST-TIME CLAIMS ALBERTA: 1995 TO 1998	OCCURRENCE YEAR					Total	
	1995	1996	1997	1998	1999	Number	Percent
A: 01 Day	106	155	147	165	209	782	13.2
B: 02 Days	90	121	137	131	131	610	10.3
C: 03 - 05 Days	175	205	289	286	279	1,234	20.9
D: 06 - 10 Days	143	167	208	194	171	883	15.0
E: 11 - 20 Days	109	108	154	164	160	693	11.7
F: 21 - 30 Days	58	59	78	94	95	384	6.5
G: 31 Days OR More	193	164	248	267	252	1,124	19.0
H: Unspecified	17	36	32	56	51	192	3.3
Total	891	1,013	1,293	1,357	1,348	5,902	100.0

11.3 Part of Body Injured

LOST-TIME CLAIMS ALBERTA: 1995 TO 1998	OCCURRENCE YEAR					Total	
	1995	1996	1997	1998	1999	Number	Percent
BACK	201	235	299	302	297	1,334	22.6
FINGER(S)	178	180	251	265	234	1,108	18.8
WRIST(S)/HAND(S)	99	113	148	159	157	676	11.5
OTHER TRUNK	98	114	144	140	149	645	10.9
LEG(S)	85	93	111	114	121	524	8.9
ANKLE(S) & FOOT(FEET)-NOT TOES	67	78	104	103	117	469	7.9
OTHER UPPER EXTREMITIES	50	56	74	95	80	355	6.0
EYE(S)	24	40	48	52	58	222	3.8
OTHER HEAD	32	32	37	38	38	177	3.0
NECK	29	21	32	34	29	145	2.5
OTHER LOWER EXTREMITIES	14	19	22	18	23	96	1.6
MULTIPLE BODY PARTS	6	23	12	33	35	109	1.8
BODY SYSTEMS	8	7	9	1	8	33	0.6
OTHER BODY PARTS	.	2	.	.	1	3	0.1
UNKNOWN	.	.	2	3	1	6	0.1
Total	891	1,013	1,293	1,357	1,348	5,902	100.0

11.4 Type of Event/Exposure

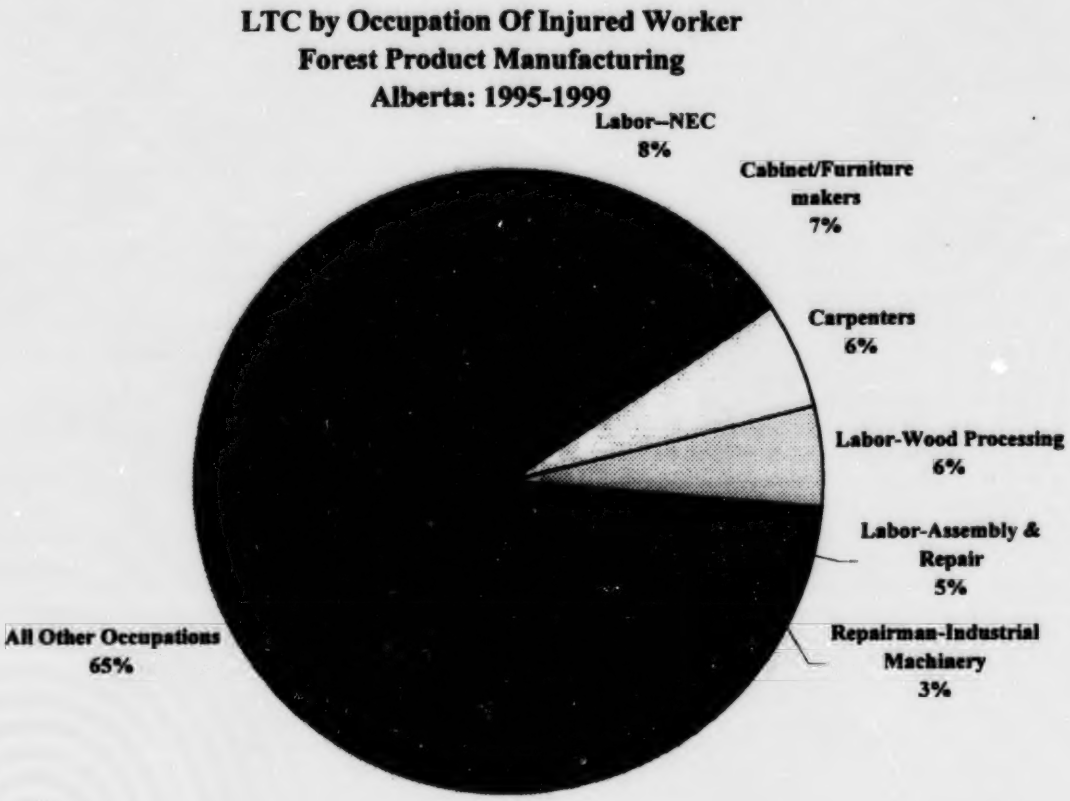
LOST-TIME CLAIMS ALBERTA: 1995 TO 1999	OCCURRENCE YEAR					Total	
	1995	1996	1997	1998	1999	Number	Percent
OVEREXERTION	196	213	277	294	312	1,292	21.9
STRUCK BY OBJECTS	177	212	285	285	269	1,228	20.8
CAUGHT IN OBJECTS	106	98	139	145	146	634	10.7
BODILY REACTION	105	84	121	115	112	537	9.1
STRUCK AGAINST OBJECTS	61	86	121	138	129	535	9.1
FALL ON SAME LEVEL	34	57	58	75	70	294	5.0
FALL TO LOWER LEVEL	39	45	49	50	47	230	3.9
RUBBED OR ABRADED	33	24	33	30	31	151	2.6
EXPOSURE TO HARMFUL SUBSATANCE	25	25	32	19	43	144	2.4
REPETITIVE MOTIONS	.	17	29	35	31	112	1.9
TRANSPORTATION ACCIDENTS	10	9	13	22	14	68	1.2
OTHER FALLS	.	14	26	18	14	72	1.2
OTHER BODILY REACTION/EXERTION	.	1	12	13	13	39	0.7
OTHER CONTACT WITH OBJECT/EQUIP	.	6	7	6	7	26	0.4
FIRES AND EXPLOSIONS	1	.	1	1	.	3	0.1
ASSAULTS/VIOLENT ACTS BY PERSONS	.	1	1	1	.	3	0.1
UNKNOWN	104	121	89	110	110	534	9.0
Total	891	1,013	1,293	1,357	1,348	5,902	100.0

11.5 Source of Injury

LOST-TIME CLAIMS ALBERTA: 1995 TO 1998	OCCURRENCE YEAR					Total	
	1995	1996	1997	1998	1999	Number	Percent
PARTS AND MATERIALS	179	217	324	326	348	1,394	23.6
PERSONS-INJURED WORKER	107	105	156	161	149	678	11.5
MACHINERY	85	103	159	158	132	637	10.8
STRUCTURES/SURFACES	58	110	136	148	138	590	10.0
CONTAINERS	47	45	65	62	74	293	5.0
OTHER SOURCES	59	41	49	58	51	258	4.4
FURNITURE AND FIXTURES	40	46	35	43	49	213	3.6
HANDTOOLS-UNPOWERED	30	31	29	45	49	184	3.1
VEHICLES	24	31	46	41	33	175	3.0
HANDTOOLS-POWERED	48	23	35	23	27	156	2.6
OTHER PLANTS/ANIMALS/MINERALS	24	21	30	34	27	136	2.3
OTHER TOOLS/EQUIPMENTS	1	13	24	23	22	83	1.4
CHEMICAL/CHEMICAL PRODUCTS	11	12	16	8	15	62	1.1
PERSONS-OTHER THAN INJURED WORKER	.	3	1	1	1	6	0.1
MINERALS-METALS/NONMETALLIC	3	2	3	1	4	13	0.2
UNKNOWN	175	210	185	225	229	1,024	17.4
Total	891	1,013	1,293	1,357	1,348	5,902	100.0

12. Characteristics of the Injured Worker

12.1 Occupation[2] of Injured worker



[2] None of the individual occupations belonging to the 'all other occupation' category accounted for more than 3% of the total lost-time claims.

12.2 Length of Time Employed

LOST-TIME CLAIMS ALBERTA: 1995 TO 1999	OCCURRENCE YEAR					Total	
	1995	1996	1997	1998	1999	Number	Percent
A: LESS THAN 1 MONTH	86	89	165	130	154	624	10.6
B: 1 MONTH TO < 6 MONTHS	186	229	269	309	270	1,263	21.4
C: 6 MONTHS TO < 1 YEAR	113	91	154	130	133	621	10.5
D: 1 YEAR OR MORE	400	319	407	502	514	2,142	36.3
E: TIME UNSPECIFIED	106	285	298	286	277	1,252	21.2
Total	891	1,013	1,293	1,357	1,348	5,902	100.0

12.3 Age of injured Worker

LOST-TIME CLAIMS ALBERTA: 1995 TO 1999	OCCURRENCE YEAR					Total	
	1995	1996	1997	1998	1999	Number	Percent
A: 15 - 19 Years	51	86	128	101	132	498	8.4
B: 20 - 24 Years	157	195	246	247	249	1,094	18.5
C: 25 - 34 Years	334	373	411	441	403	1,962	33.2
D: 35 - 44 Years	224	245	334	365	377	1,545	26.2
E: 45 - 54 Years	81	81	125	144	150	581	9.8
F: 55+ Years	44	32	47	57	34	214	3.6
G: Unspecified	.	1	2	2	3	8	0.1
Total	891	1,013	1,293	1,357	1,348	5,902	100.0

12.4 Gender of Injured Worker

LOST-TIME CLAIMS ALBERTA: 1995 TO 1999	OCCURRENCE YEAR					Total	
	1995	1996	1997	1998	1999	Number	Percent
MALES	786	911	1,120	1,225	1,175	5,217	88.4
FEMALES	97	76	123	107	143	546	9.3
UNSPECIFIED	8	26	50	25	30	139	2.4
Total	891	1,013	1,293	1,357	1,348	5,902	100.0

13. Cost of Claims and Employer Premiums

Forest Product Manufacturing

	OCCURRENCE YEAR				
	1995	1996	1997	1998	1999
TRANSACTION YEAR					
1995	$2,159,407				
1996	$1,447,424	$2,079,424			
1997	$616,525	$1,451,414	$3,197,359		
1998	$705,274	$812,244	$1,782,820	$3,446,896	
1999	$908,632	$640,980	$1,472,750	$2,524,982	$3,398,775
Total Cost	$5,837,262	$4,984,061	$6,452,928	$5,971,877	$3,398,775
Total Premiums	$17,232,389	$18,418,849	$19,720,699	$14,673,775	$12,881,723

The above cost of lost-time claims and premiums are for the five-year period 1995 through 1999. The data is as at July 6, 2000.

The claim costs reflect amount paid on claims that have occurred in the five-year period. The claim costs are tracked by the year of occurrence and year that the costs were transacted.

The premiums are the total premiums paid by employers for the year.

14. Occupational Fatalities:-Forest Product Manufacturing

An occupational fatality is the death of a worker that results from a work-related incident or exposure. Alberta Labour classifies occupational fatalities into three general categories: motor vehicle collision, workplace incident and occupational disease. Each of these is described below.

Motor Vehicles Incidents

Motor vehicles incidents typically involve a non-industrial vehicle operating on public roads in which the fatally injured worker was either a driver or a passenger. This category also includes fatalities involving aircraft crashes, train crashes, helicopter crashes etc.

Workplace Incidents

Fatal workplace incidents consist of cases in which the worker dies at a work site, or as a result of injuries sustained at a work site. This is the type of fatality that Alberta Labour typically investigates.

Occupational Disease

Occupational disease fatalities consist mostly recognize occupational disease, that is, disease known to be primarily or exclusive work-related. Examples are asbestos and black lung disease.
Occupational diseases are usually diagnosed many years after the initial or crucial exposure to the toxic substance, and in such cases it is very difficult to determine when the exposure occurred. This category should, therefore, not be interpreted to reflect present work site hazards. This category also includes heart attacks suffered on the job.

Each year the Workers Compensation Board (WCB) accepts occupational fatality claims for compensation. Most of the occupational disease fatalities accepted in a particular year are the result of incidents or exposure from prior years.

Description of Fatalities Accepted by the WCB
Forest Product Manufacturing
Alberta: 1995-1999

Year	Occupational Disease		Motor Vehicle incident		Workplace Incident		Total	
	N	%	N	%	N	%	N	%
1995	0	0	0	0	0	0	0	0
1996	1	33.3	0	0.0	2	66.7	3	100
1997	0	0.0	1	50.0	1	50.0	2	100
1998	0	0.0	1	50.0	1	50.0	2	100
1999	0	0.0	0	0.0	1	100.0	1	100
Total	1	12.5	2	25.0	5	62.5	8	100

15. OHS Investigated Occupational Fatalities, 1995-1999

Forest Product Manufacturers (4)

YEAR:	1996	FILE:	0838
OCCUPATION:	Labourer - Pulp and Paper Industry	AGE:	27
INDUSTRY:	Plywood, Chipboard, Strand board and Fibreboard Mills		
EXPERIENCE:	Unspecified		

DESCRIPTION: The self-propelled elevated work platform a worker was using, was positioned near a large hydraulic press . The action of the press lifted the platform beyond its normal extended limits. As a result the platform tipped and the railing and hydraulics failed, causing the platform to collapse. The worker fell approximately 4.5 metres to the plant floor, sustaining fatal injuries.

YEAR:	1997	FILE:	0878
OCCUPATION:	Electrician	AGE:	42
INDUSTRY:	Plywood, chipboard, Strand board and fibreboard Mills		
EXPERIENCE:	19 years in electrical trade (Journeyman Electrician)		

DESCRIPTION: Two electricians were making adjustments to the moulding panel stacker outfeed rollcase. The stacker was operating in the automatic mode and the unit was not stopped or locked out by either electricians. One of them crawled underneath the stacker while the other placed himself on the opposite side to assist. When the adjustments were complete, the worker who was underneath the stacker started to crawl back out. The elevator of the stacker descended and pinned him against a lower cross member resulting in fatal injuries.

YEAR:	1998	FILE:	0897
OCCUPATION:	Owner/Operator of Cabinet Making Shop	AGE:	51
INDUSTRY:	Wood Products Manufacturing		
EXPERIENCE:	14 years		

DESCRIPTION: The owner was operating a large computerized table saw known as a "beam cutter". This machine had been installed two weeks prior to the incident and only the owner knew how to operate it. The owner moved from the front of the saw to the back and leaned around the control panel to check or adjust some gauges. As the computer was about to complete the cutting sequence the owner became pinned between the control panel and the edge of the carriage tray where he received fatal crush injuries. When the other workers found the owner trapped, they did not know how to disengage the saw in order to free him. It was not until the fire department arrived that the victim was released.

The investigation concluded that is should not have been necessary for the owner to leave the front of the machine during its operation and place himself in an unsafe position. The manufacturer of the table saw was notified of the incident and since then a safeguard has been installed to eliminate the pinch point.

There was one fatality in 1999 that is still under investigation

Appendix A: Terms, Definitions, and Formulas

Lost-Time Claim

A lost-time claim (LTC) is a claim for an occupational injury or disease that disables the worker beyond the day of injury. Included are claims for which wages compensation are paid, permanent disability claims, fatalities, and cases in which the injured worker is assigned light duties or other modified work.

Person-Years

Person-year estimates are calculated from wage and payroll data provided by account holders to the WCB. Alberta Labour uses these data to estimate an average industry wage, and uses the average industry wage and employer payroll data to estimate person-years foe each employer and each industry. One person-year ie equivalent to one full-time worker working for one year, and can be assumed to equal 2,000 hours worked.

LTC Rate

The lost-time claim (LTC) rate is calculated by dividing the number of lost-time claims by the person-year estimate, and multiplying the result by 100. The LTC rate represent the probability or risk of disabling injury or disease to a worker during a period of one year's work. Comparisons of LTC rates between industries, or between years, can be used to indicate increases, decreases, or differences in this risk.

$$\text{LTC Rate} = \frac{\text{Number of LTCs X 100}}{\text{Estimated Person-years}}$$

Duration (Days Lost)

The duration of disability is the number of days following the injury or disease for which the worker was disabled, and unable to perform normal work duties. This information is obtained for this report from data on compensation days paid on each claim from WCB. Alberta Labour obtains these data on March 31 of the year following the claim year, and does not update the information, even though many injured workers continue to be disabled beyond this date. As a result, the duration information reported here underestimates the true impact of lost-time injury and disease.

Duration Rate

The duration rate is calculated by dividing the number of workdays lost (disability days) by the person-year estimate, and multiplying by 100. The result is expressed as "days lost per 100 person-years worked", and indicates, in part, the economic impact of occupational injury and disease. Duration rates are not recommended as reliable indicators of full economic cost. In addition, readers are warned that duration rates are highly unstable when based on only a few lost-time claims; it is recommended that the duration rate not be calculated based upon fewer than 30 lost-time claims.

$$\text{Duration Rate} = \frac{\text{Disability Days X 100}}{\text{Estimated Person-Years}}$$

WCB Accepted Fatality

An occupational fatality is the death of a worker that results from a work-related incident or exposure and which has been accepted by the WCB for compensation. A fatality is counted in the year it is accepted.

NEC

Means "Not Elsewhere Classified"

UNS

Means "Unspecified"

Appendix B: Forestry & Related Industries 1999 Industry Codes

Forestry	3100~Logging and Woodland Operations 3902~Timber Management
Forest Product Manufacturers	25100~Sawmills and Planing Mills 25401~Manufacturing of Wood Products 25900~Peeling and Pointing of Post 25901~Treating of Timber 27102~Pulp Mills 27103~Plywood/Chipboard/Strand board Mills